

# **EXHIBIT 7**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION

IN RE NATIONAL	:	MDL No. 2804
PRESCRIPTION OPIATE	:	CASE NO. 17-MD-2804
LITIGATION	:	(DAP)
	:	

SECOND SUPPLEMENTAL EXPERT REPORT OF  
CRAIG J. MCCANN, PH.D., CFA  
April 15, 2019

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## **I. Qualifications and Remuneration**

1. On March 25, 2019, I filed an Expert Report (the “McCann Report”) in this matter. My Qualifications and Remuneration are contained in the McCann Report §1 and are unchanged.

### **A. Materials Reviewed**

2. The list of Materials Reviewed in preparing the McCann Report are contained in the McCann Report §2 and are unchanged except to add the following materials:

- a. Administrative Memorandum of Agreement (between DEA and Mallinckrodt);<sup>1</sup>
- b. Second Amended Complaint, Cuyahoga County;
- c. Third Amended Complaint, Summit County;
- d. “chargeback” data identified in Appendix 2; and
- e. IQVIA/IMS data identified below.

### **B. Assignment**

3. I documented how I processed, validated and augmented opioid transaction data produced by the Drug Enforcement Administration (“DEA”) and by the Defendants, focused entirely on Distributor transactions in the McCann Report.

4. I have been asked to file this report (the “Second Supplemental McCann Report”) addressing transactions originating with Manufacturer

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<sup>1</sup> [www.justice.gov/usao-edmi/press-release/file/986026/download](http://www.justice.gov/usao-edmi/press-release/file/986026/download)

Defendants which ultimately led to opioid transactions with Dispensers in Cuyahoga County and Summit County.

5. I have now been asked by Counsel to document how I further processed and validated opioid transaction data produced by the DEA, to attribute transactions with Dispensers to Manufacturers in this Second Supplemental McCann Report.<sup>2</sup>

6. I have been asked to summarize transactions in the ARCOS Data, especially those transactions into Cuyahoga County and Summit County attributable to Manufacturer Defendants.

7. I have also been asked to report the results of applying certain algorithms to the ARCOS Data attributable to Manufacturer Defendants.

## **II. Summary of Opinions**

8. I previously concluded that the ARCOS Data produced by the DEA reflecting opioid shipments from January 2006 through December 2014 is reliable. I further concluded that the transaction records produced in discovery by the Distributor Defendants other than AmerisourceBergen are a reliable source of transactions data before 2006 and after 2014 for the varied time periods covered by the Distributor Defendants' transactions productions.

9. In the next section, I explain how the ARCOS Data can be used to identify the Manufacturer for virtually all the transactions in the ARCOS Data. In Section IV and Section V, I report the results of attributing

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<sup>2</sup> On April 3, 2019, I filed a brief supplemental report (the "McCann Supplemental Report") to insert some Figures and Tables which had been inadvertently excluded from the McCann Report.

transactions flagged by a non-exhaustive set of algorithms applied to the ARCOS Data in the McCann Report to Manufacturer Defendants.

### III. Attributing Transactions With Dispensers to Manufacturers

#### A. ARCOS Data

##### 1. NDC Labeler Field

10. Drug packages are uniquely identified in the ARCOS Data by a National Drug Code, or NDC. The NDC has three segments, the first of which identifies the drug product's Labeler which is typically but not always the drug's Manufacturer.<sup>3</sup> For example, [REDACTED] identifies [REDACTED] tablets manufactured by [REDACTED].

11. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].<sup>4</sup> [REDACTED]

[REDACTED]

[REDACTED].<sup>5</sup>

12. Each record for the [REDACTED] transactions to Dispensers in Cuyahoga County and Summit County from 2006 to 2014 includes an NDC code.<sup>6</sup>

<sup>3</sup> "NDC Dictionary Instructions," Drug Enforcement Administration, October 2010. Current version available at <https://www.deadiversion.usdoj.gov/arcos/ndc/readme.txt>.

<sup>4</sup> See McCann Report, §VIII.A, Table 16.

<sup>5</sup> See McCann Report, §VIII.B, Table 20.

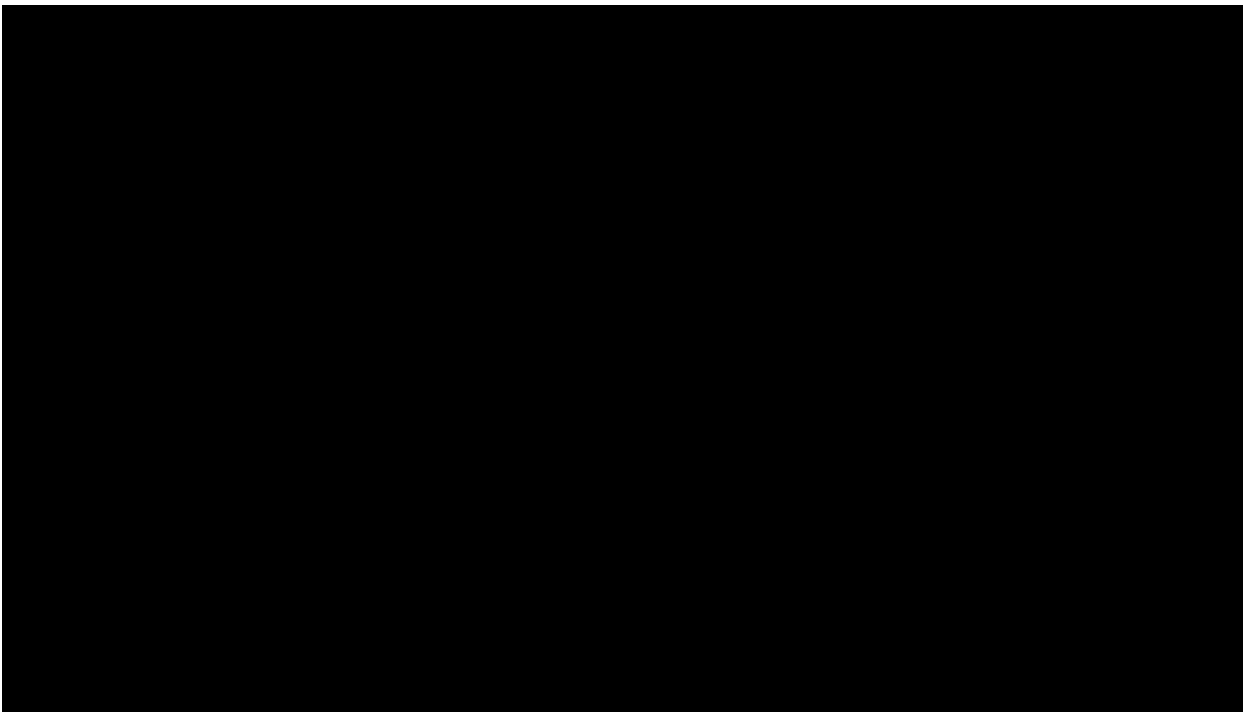
<sup>6</sup> From this point forward, my analysis deals with twelve non-treatment opioids.



13. I list the entries in the Labeler field for transactions with Dispensers in Cuyahoga County and Summit County sorted by MME in Appendix 1. The top 20 Labelers by MME [REDACTED] MME shipped to Dispensers - in Cuyahoga County and Summit County are listed in Table 1.

Table 1 Top 20 Labelers, Cuyahoga County and Summit County, ARCOS Data, 2006-2014.

<u>Rank</u>	<u>Labeler Name</u>	<u>MME</u>	<u>Perecent</u>	<u>Cumulative</u>
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14. A Manufacturer Defendant may manufacture an NDC-coded drug package but a different firm may be the package's Labeler. The ARCOS Data allows us to more fully identify the Manufacturer of all NDC-coded drug packages shipped to a Dispenser in Cuyahoga County and Summit County by tracing the drug package upstream to the Manufacturer associated with that NDC as I explain next.

## 2. *Seller Business Activity*

15. Each transaction in the ARCOS Data includes a Seller Business Activity field and a Buyer Business Activity field. Possible values in these fields include “Manufacturer”. Manufacturers can have more than one DEA number and can show up in some transactions as the Buyer and in some transactions as the Seller.

16. A Distributor reporting an opioid sale to a Dispenser purchased that drug either from another Distributor or from a Manufacturer.<sup>7</sup> Both the Distributor selling to the Dispenser and the Distributor or Manufacturer it bought the drug from report a prior transaction in that NDC. This prior transaction will almost always be for a larger quantity than the transaction to an individual Dispenser since Distributors sell to multiple Dispensers.

17. Shipments to Dispensers in the ARCOS Data can be traced upstream to Manufacturers. The flow of an opioid to the Dispenser may pass through more than one Distributor and through more than one Manufacturer but ultimately there will be a Manufacturer that began the downstream flow of opioids ending at the Dispenser. Based on the ARCOS data, more than [REDACTED] of the MME shipped to Dispensers in Cuyahoga County and Summit County travel down paths that originate upstream with a Manufacturer.<sup>8</sup>

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7 [REDACTED]

8 [REDACTED]

**B. Chargeback Data**

18. I received “chargeback” data produced by some Manufacturer Defendants. The chargeback data identifies drug by NDC, the Dispenser, the quantity sold and the price received. The chargeback data I have received only partially covers sales of these Manufacturer Defendants’ opioids.

19. The chargeback data I received shows patterns of shipments of drugs from Manufacturers all the way through to Dispensers. Assuming the limited chargeback data provided to me is typical in nature and scope of that available to the Manufacturers, the Manufacturer Defendants could have monitored orders from Dispensers, primarily retail and chain pharmacies, if they received chargeback data for all sales of all opioids they shipped to other Manufacturers and to Distributors.

**C. IQVIA/IMS Data**

20. The IQVIA/IMS Data I received from Counsel includes some patient information and detailed information including name and physical address of the prescribing physician. Assuming the IQVIA/IMS Data provided to me is typical in nature and scope to that which was available to Manufacturers, a Manufacturer Defendant could have known where some or all of its drugs were being prescribed.

**D. Combining NDC, ARCOS Business Activity and Chargeback Data to Attribute Transactions with Dispensers to Manufacturers**

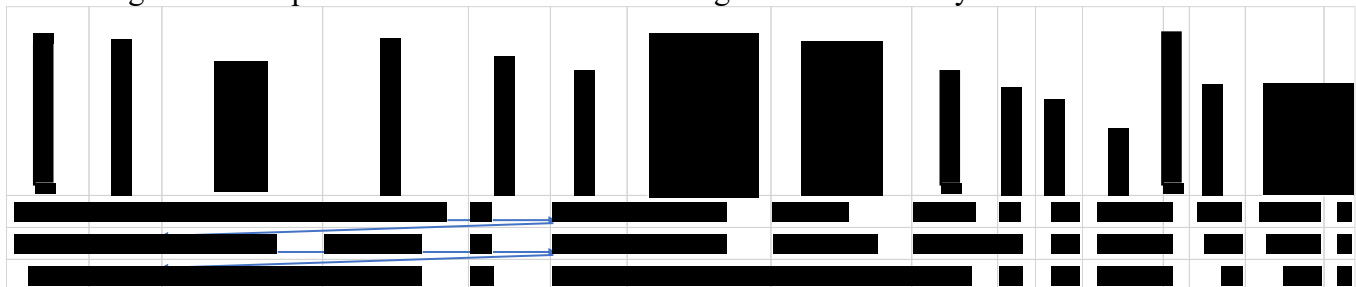
21. I am able to identify those NDC for which a Manufacturer Defendant was the Labeler, was the Manufacturer or included the NDC code in its chargeback data for [REDACTED] of the opioid MME shipped to Dispensers in

Cuyahoga County and in Summit County as reflected in the ARCOS Data produced by the DEA for the period 2006-2014 as follows.

22. I first identify those NDCs that have a Manufacturer Defendant or a Manufacturer Defendant subsidiary as the Labeler.<sup>9</sup> [REDACTED] of the opioid MME shipped to Dispensers in Cuyahoga County and Summit County involve NDCs for which a Manufacturer Defendant is the Labeler.

23. Next, I trace back through the transactions from Distributors to Dispensers in the ARCOS Data to the first reported transaction which could plausibly have led to the Distributor's sale to a Dispenser. To make matters concrete, consider the series of ARCOS reported transactions listed in Figure 1. NDC [REDACTED] identifies [REDACTED] manufactured by [REDACTED]

Figure 1 Example ARCOS Transactions Leading to Ohio Pharmacy



<sup>9</sup> <https://www.fda.gov/Drugs/DevelopmentApprovalProcess/UCM070829> According to FDA's website, FDA assigns the Labeler code, and the product and package codes of the NDC are assigned by the Labeler.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

24. [REDACTED] of the MME in transactions to Dispensers in Cuyahoga County and Summit County can be traced back to a Manufacturer that originated at least [REDACTED] of the MME in that NDC nationally. That is, independent of the Labeler information in the NDC code, the Manufacturer provenance of less than [REDACTED] of the MME in transactions in Cuyahoga County and Summit County is uncertain as a result of tracing the flow of opioids in the ARCOS Data. [REDACTED] of the MME in transactions to Dispensers in

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10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

Cuyahoga County and Summit County can be traced to a Manufacturer Defendant.

25. There are some instances, as in Figure 1 above, where the Manufacturer and the Labeler are different but both are Manufacturer Defendants. In other cases, either the Manufacturer or the Labeler – but not both – are Manufacturer Defendants.

#### **IV. Manufacturer Attribution of Flagged Transactions**

##### **A. Maximum Monthly, Trailing Six-Month Threshold**

26. As described in McCann Report, §IX.A [REDACTED]

[REDACTED]						
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]						
[REDACTED]						









County. McCann Report, ¶ 133.

27. Table 2 reports the result of attributing the flagged transactions in Cuyahoga County to Manufacturer Defendants that were either the Labeler, the Manufacturer or had included the NDC in its chargeback data. This analysis could be extended to earlier and later time periods with additional ARCOS data or using Defendant transaction data before 2006 or after 2014.

Table 2 Trailing Six-Month Maximum Threshold Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014



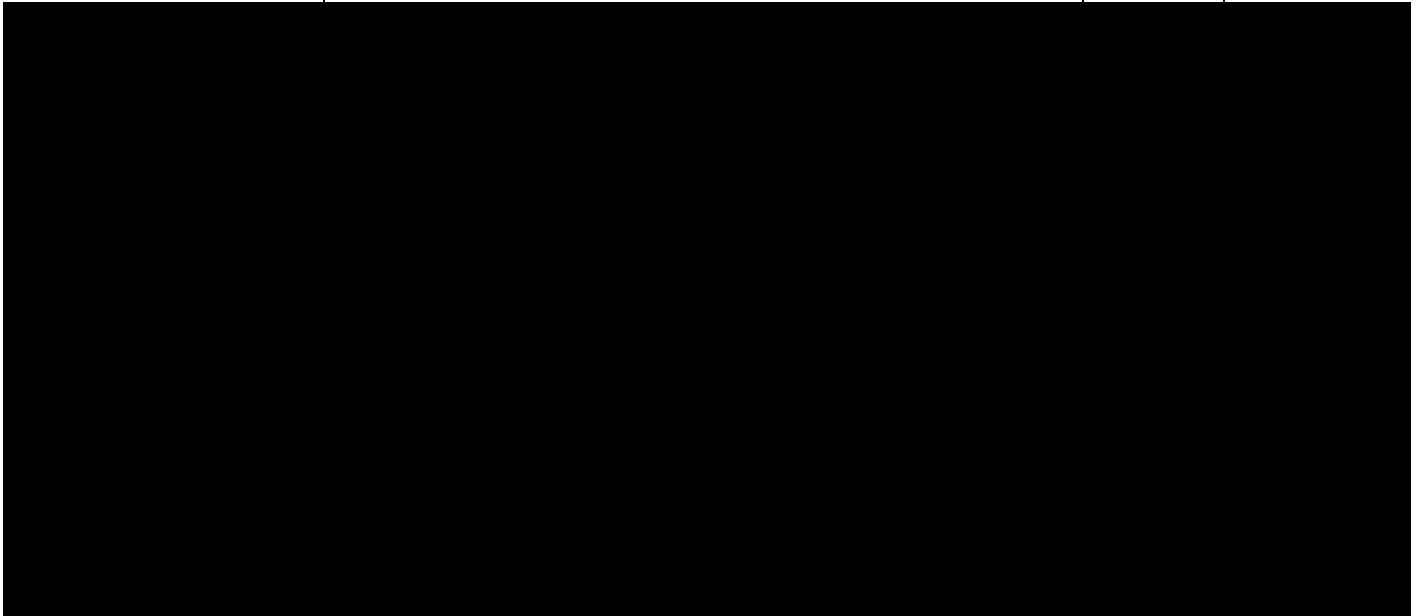
28. As described in McCann Report, §IX.A 

McCann Report, ¶ 134.

29. Table 3 reports the result of attributing the flagged transactions in Summit County to Manufacturer Defendants that were either the Labeler, the Manufacturer or included the NDC in its chargeback data.

Table 3 Trailing Six-Month Maximum Threshold Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



**B. Twice Trailing Twelve-Month Average Pharmacy Dosage Units<sup>13</sup>**

30. As described in McCann Report, §IX.B 





31. 





 McCann Report, ¶ 137.

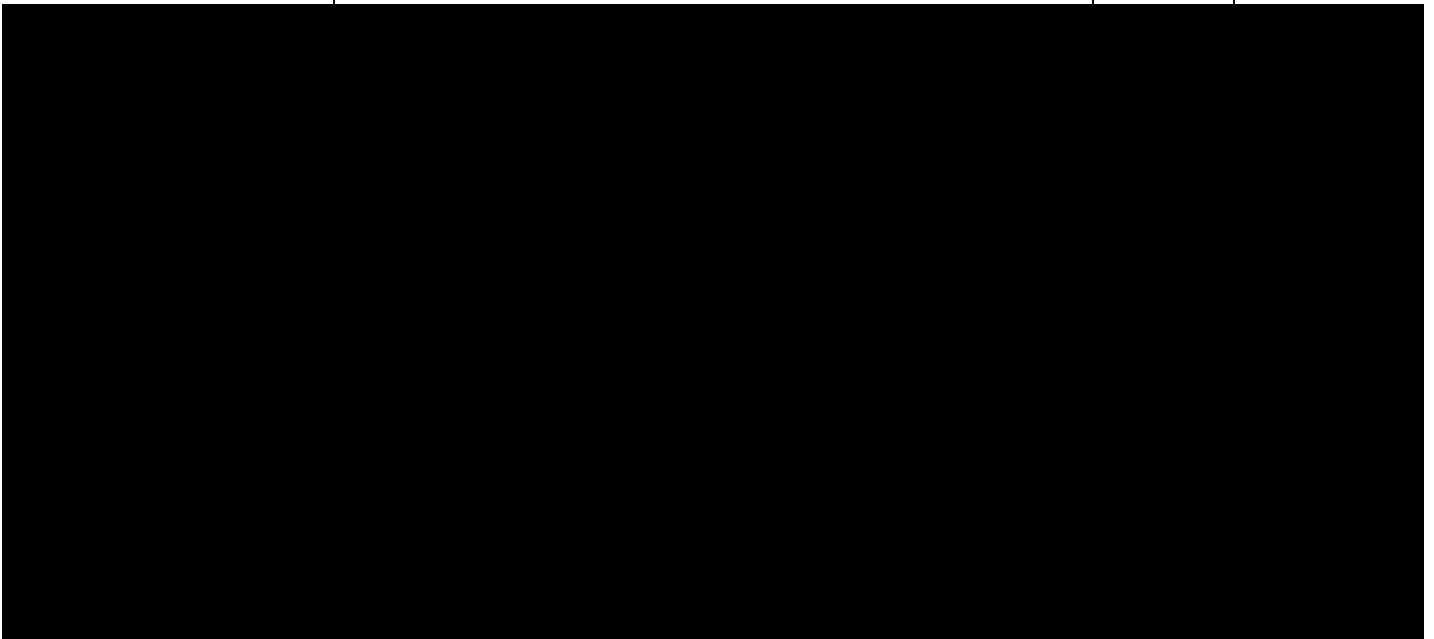
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<sup>13</sup> In the McCann Report, I reported the result of comparing transactions with Dispensers to two times, and three times, transactions with similar pharmacies nationally. I do not apply those approaches in this supplement, in part, because of the additional complexity of identifying the Manufacturer for every NDC code throughout the Country as opposed to just in Cuyahoga County and Summit County.



32. Table 4 reports the result of attributing the flagged transactions in Cuyahoga County to Manufacturer Defendants that were either the Labeler, the Manufacturer or included the NDC in its chargeback data.

Table 4 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014



33. As described in McCann Report, §IX.B 

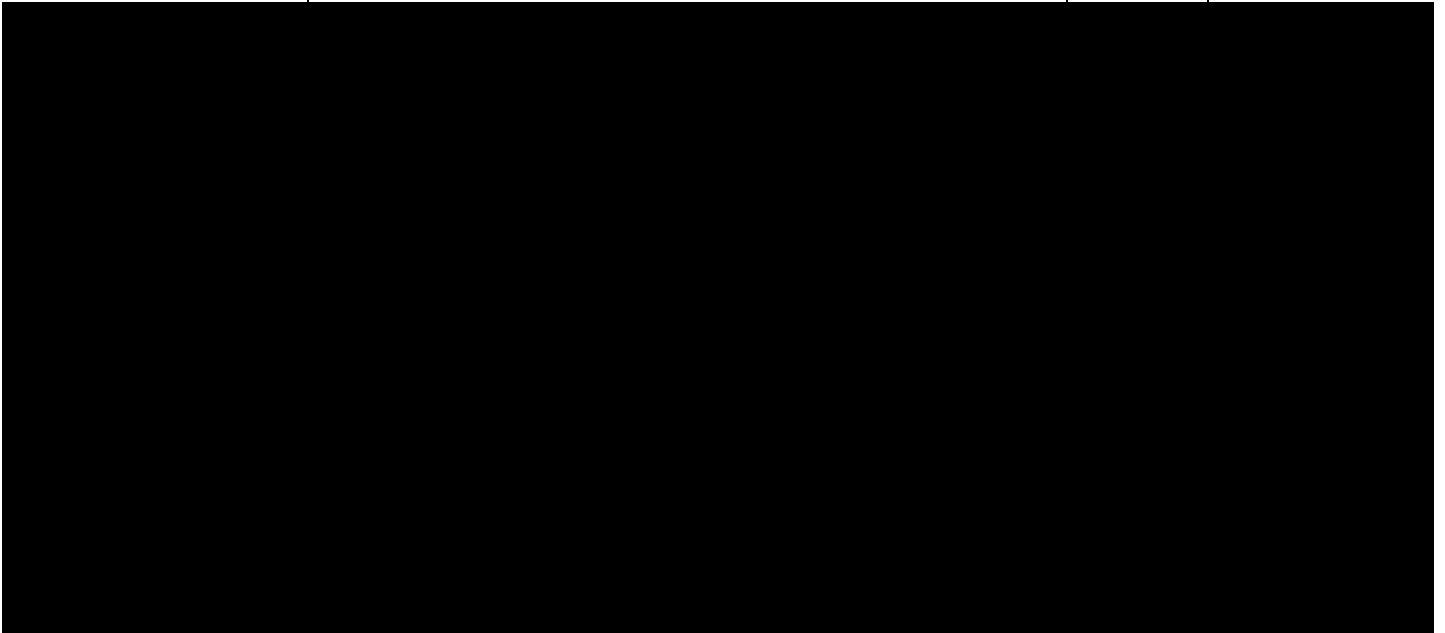

34. 


 McCann Report, ¶ 138.


35. Table 5 reports the result of attributing the flagged transactions in Summit County to Manufacturer Defendants that were either the Labeler, the Manufacturer or included the NDC in its chargeback data.

Table 5 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold  
Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



**C. Three Times Trailing Twelve-Month Average Pharmacy  
Dosage Units**

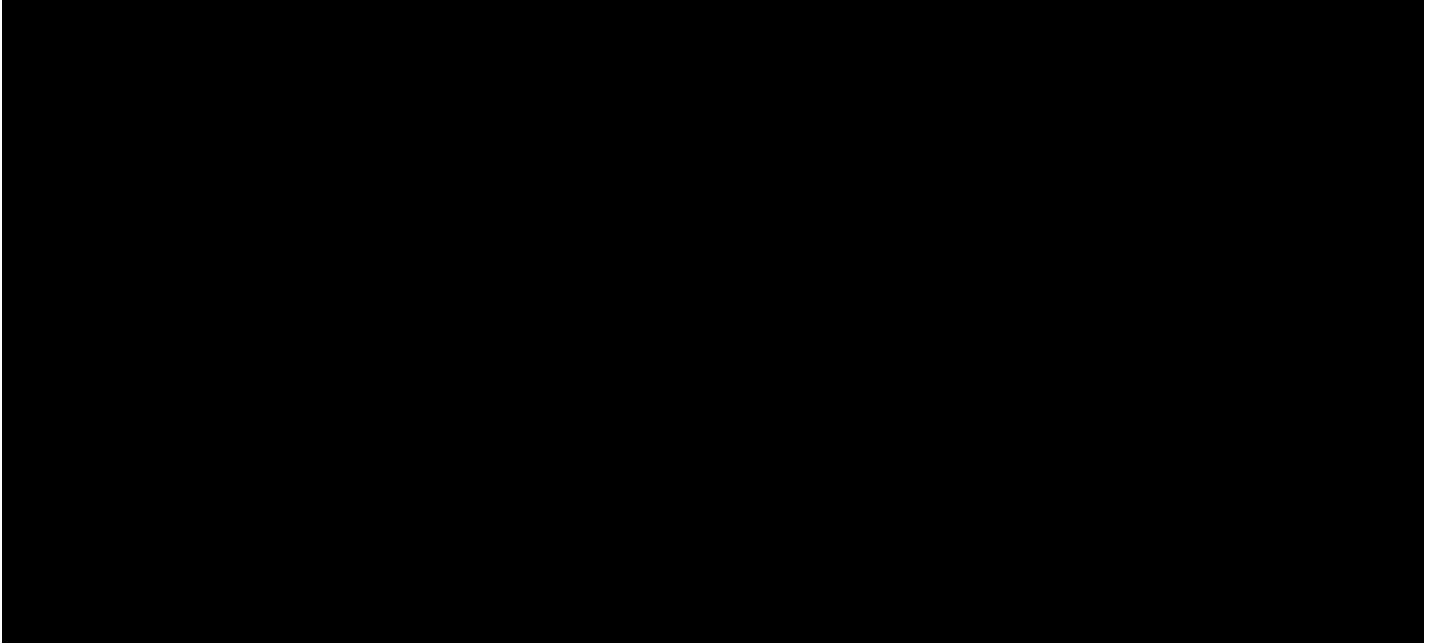
36. As described in McCann Report, §IX.C 

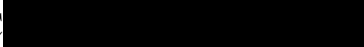





  
  
  
  
 McCann

Report, ¶ 141.

37. Table 6 reports the result of attributing the flagged transactions in Cuyahoga County to Manufacturer Defendants that were either the Labeler, the Manufacturer or included the NDC code in its chargeback data.

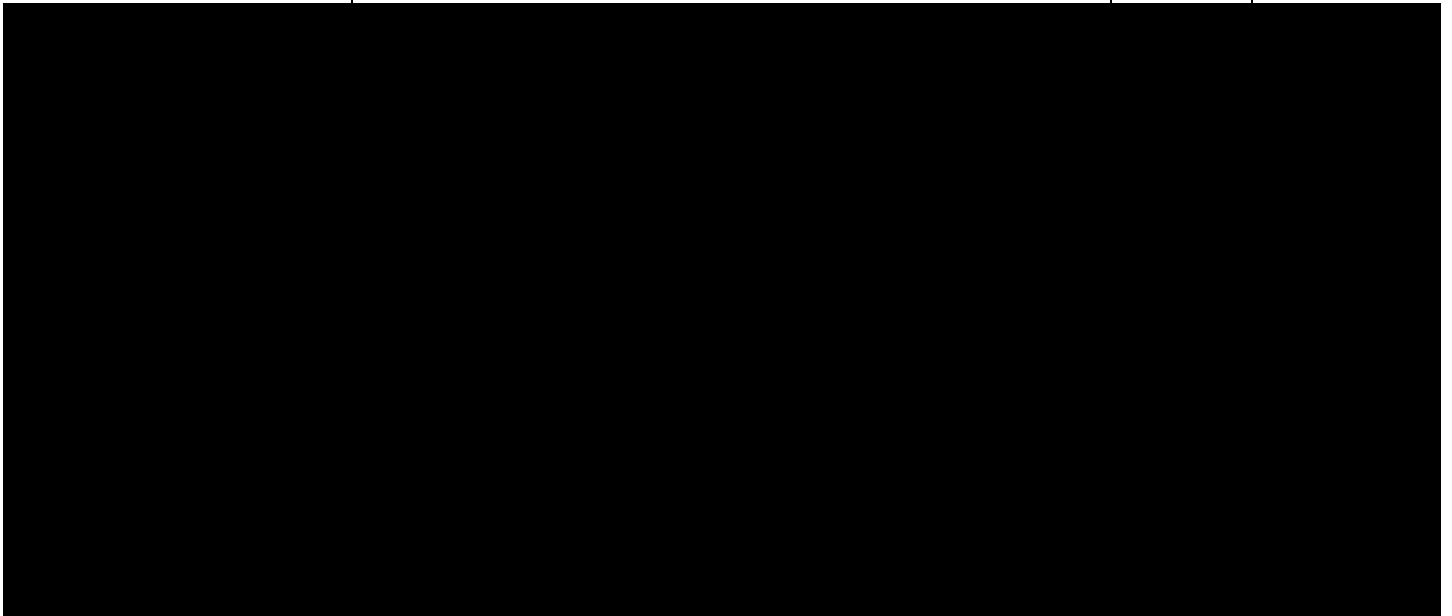
Table 6 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold  
Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-  
2014



38. As described in McCann Report, §IX.C   
  
  
  
  
 McCann  
Report, ¶ 142.

39. Table 7 reports the result of attributing the flagged transactions in Summit County to Manufacturer Defendants that were either the Labeler, the Manufacturer or included the NDC code in its chargeback data.

Table 7 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold  
Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



**D. Maximum [REDACTED] Dosage Units Monthly**

40. As described in McCann Report, §IX.D [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] McCann Report, ¶ 145.

41. Table 8 reports the result of attributing the flagged transactions in Cuyahoga County to Manufacturer Defendants that were either the Labeler, the Manufacturer or had included the NDC in its chargeback data.

Table 8 Maximum [REDACTED] Dosage Units Monthly Threshold Flagged Transactions  
Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014



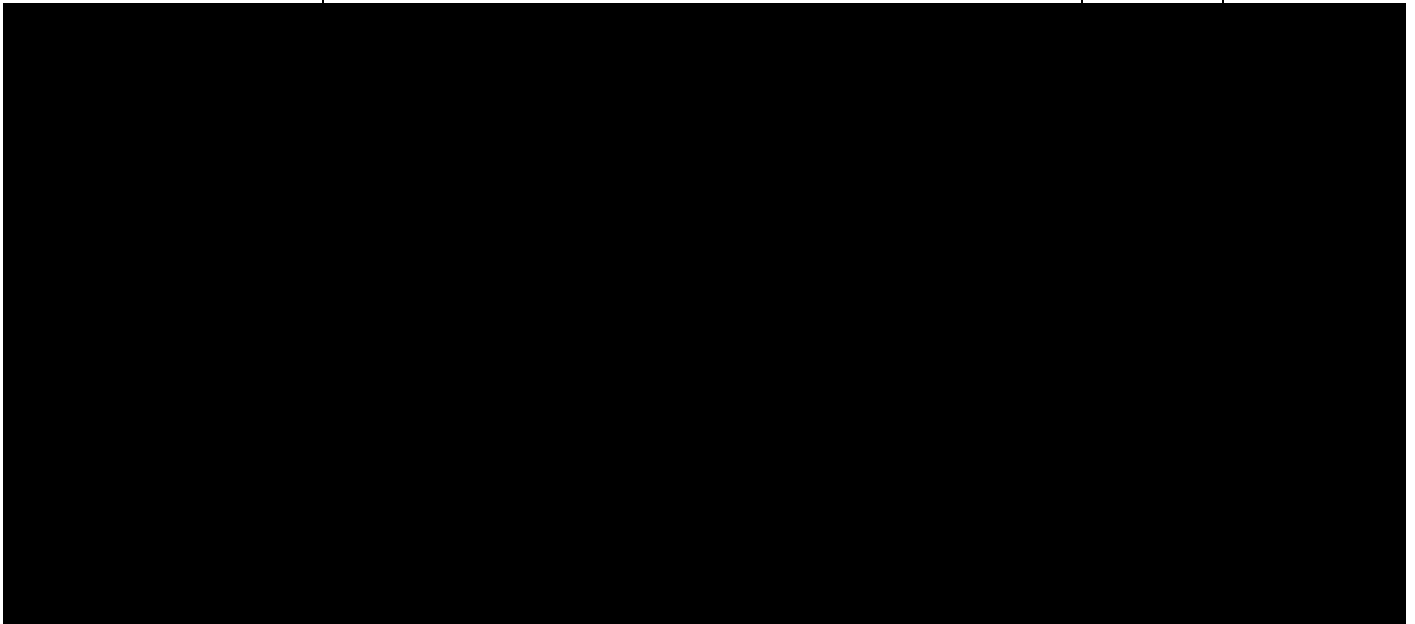
42. As described in McCann Report, §IX.D [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

McCann Report, ¶ 146.

43. Table 9 reports the result of attributing the flagged transactions in Summit County to Manufacturer Defendants that were either the Labeler, the Manufacturer or had included the NDC in its chargeback data.

Table 9 Maximum [REDACTED] Dosage Units Monthly Threshold Flagged Transactions  
Attributed to Manufacturer Defendants, Summit County, 2006-2014



**E. Maximum Daily Dosage Units**

44. As described in McCann Report, §IX.E [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] McCann Report, ¶

149.

45. Table 10 reports the result of attributing the flagged transactions in Cuyahoga County to Manufacturer Defendants that were either the Labeler, the Manufacturer or had included the NDC in its chargeback data.

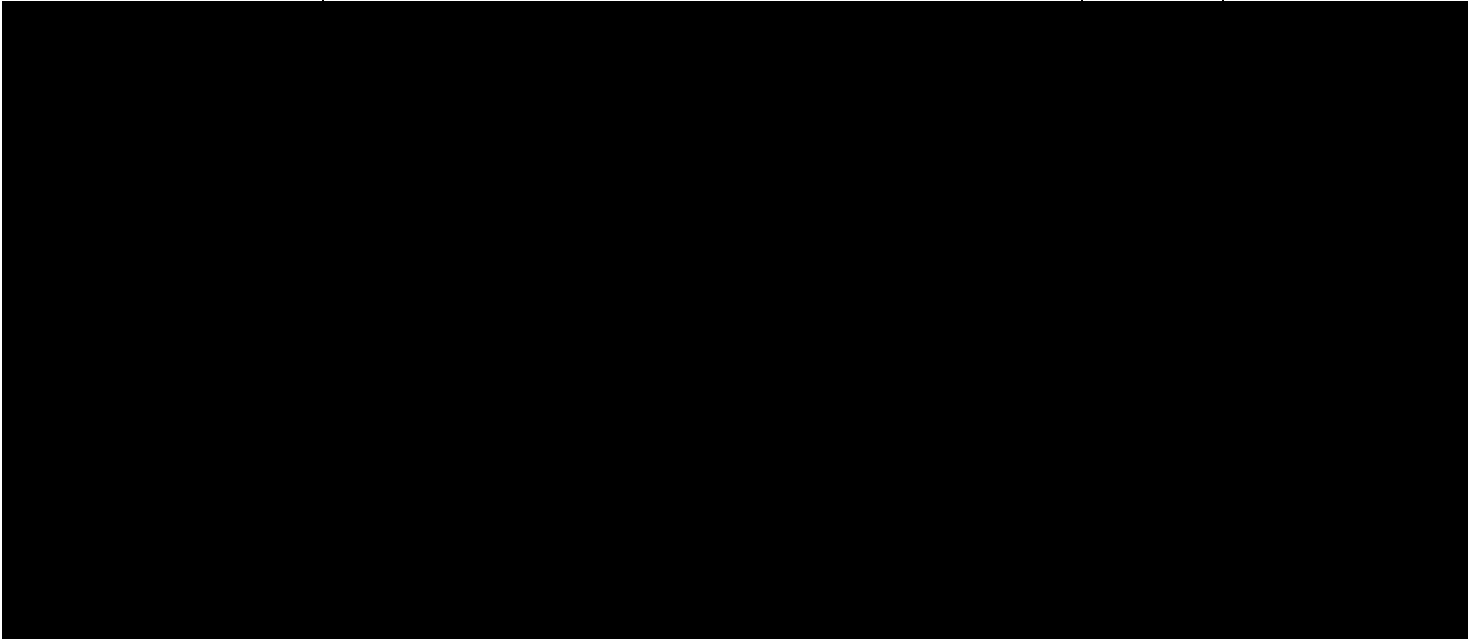
Table 10 Maximum Daily Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014



46. As described in McCann Report, §IX.E [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]. McCann Report, ¶  
150.

47. Table 11 reports the result of attributing the flagged transactions in Summit County to Manufacturer Defendants who were either the Labeler, the Manufacturer or had included the NDC in its chargeback data.

Table 11 Maximum Daily Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



**V. Flagging Transactions Attributable to Manufacturer Defendants**

48. In the previous section, I attributed transactions with Dispensers in Cuyahoga County and Summit County to Manufacturer Defendants and categorized transactions attributed to Manufacturer Defendants according to whether they were flagged or not flagged in the McCann Report.

49. An alternative approach applies the five flagging methods in the McCann Report to each Distributor-to-Dispenser transaction attributable to each Manufacturer Defendant.

**A. Maximum Monthly, Trailing Six-Month Threshold**

50. Under the first approach, I identify transactions that cause the number of dosage units to a Pharmacy in a calendar month attributable to a Manufacturer Defendant to exceed the highest number of dosage units to the same Pharmacy attributable to the same Manufacturer Defendant in any one of the six preceding calendar months. For example, if the number of dosage

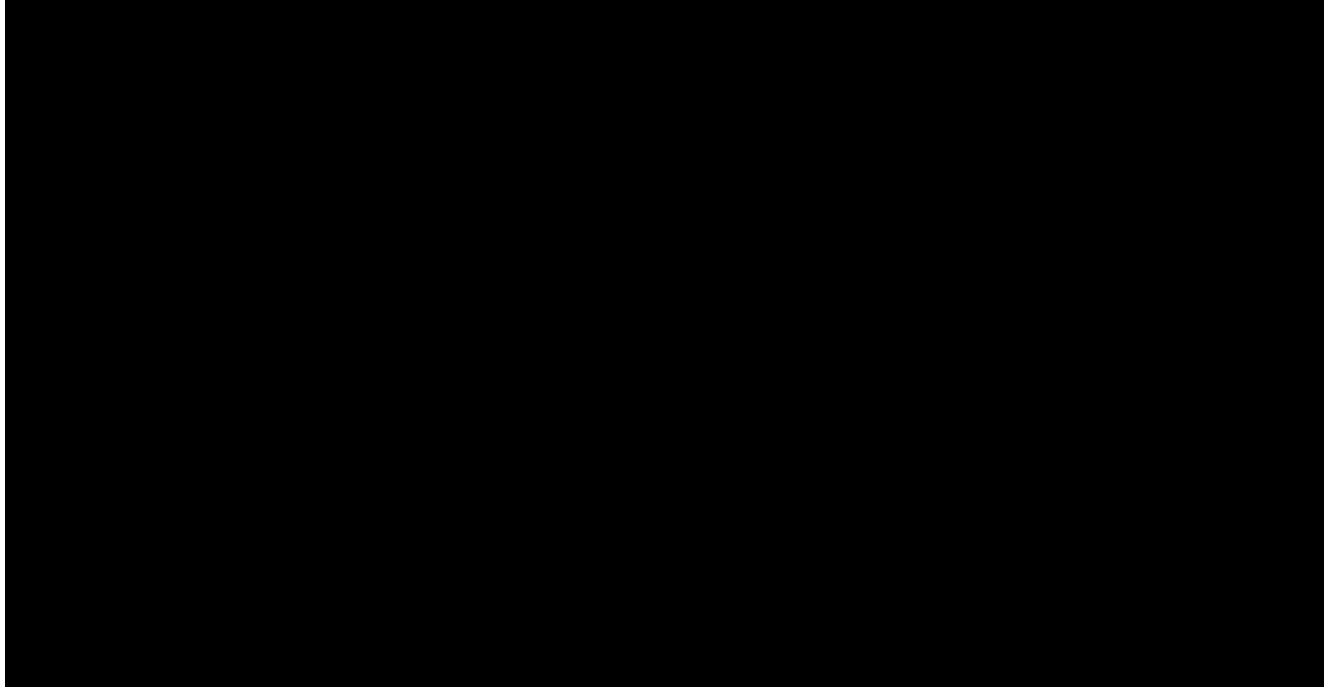


units containing hydrocodone attributable to a Manufacturer Defendant to a Pharmacy in February, March, April, May, June, and July were [REDACTED] [REDACTED] respectively, a transaction in August would be flagged if it caused the number of dosage units containing hydrocodone to the Pharmacy attributable to the same Manufacturer Defendant to exceed [REDACTED]. Any reported transactions containing hydrocodone on that date and all reported transactions containing hydrocodone attributable to the Manufacturer Defendant to that Pharmacy thereafter are flagged.

51. In this approach, and the others implemented below, I have been asked by Counsel to assume that the Manufacturer Defendant could have developed intelligence on shipments of its drugs to Dispensers in Cuyahoga County and Summit County allowing it to flag suspect transactions. I have also been asked by Counsel to assume that the Manufacturer Defendant did not effectively investigate the flagged transactions and so every subsequent transaction of that drug code is also flagged because the Manufacturer Defendant had an unfulfilled obligation to detect and investigate the first flagged transaction.

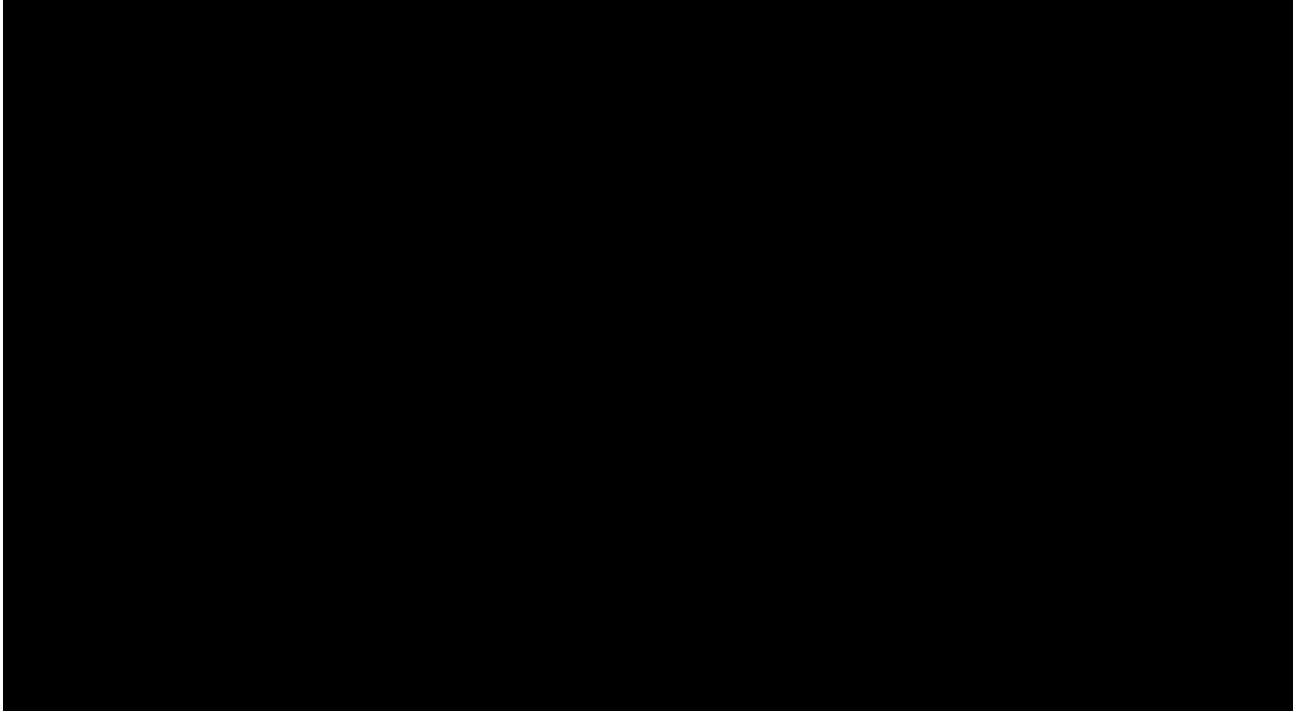
52. Figure 2 illustrates total opioid transactions to retail and chain pharmacies in Cuyahoga County from 2006 to 2014 attributable to Manufacturer Defendants. The Trailing Six-Month Maximum Threshold methodology flags [REDACTED] of transactions accounting for [REDACTED] of dosage units, [REDACTED] of MME and [REDACTED] of drug weight shipped into Cuyahoga County.

Figure 2 Trailing Six-Month Maximum Threshold Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014



53. Figure 3 illustrates total opioid transactions to retail and chain pharmacies in Summit County from 2006 to 2014 attributable to Manufacturer Defendants. The Trailing Six-Month Maximum Threshold methodology flags [REDACTED] of transactions accounting for [REDACTED] of dosage units, [REDACTED] of MME and [REDACTED] of drug weight shipped into Summit County.

Figure 3 Trailing Six-Month Maximum Threshold Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014

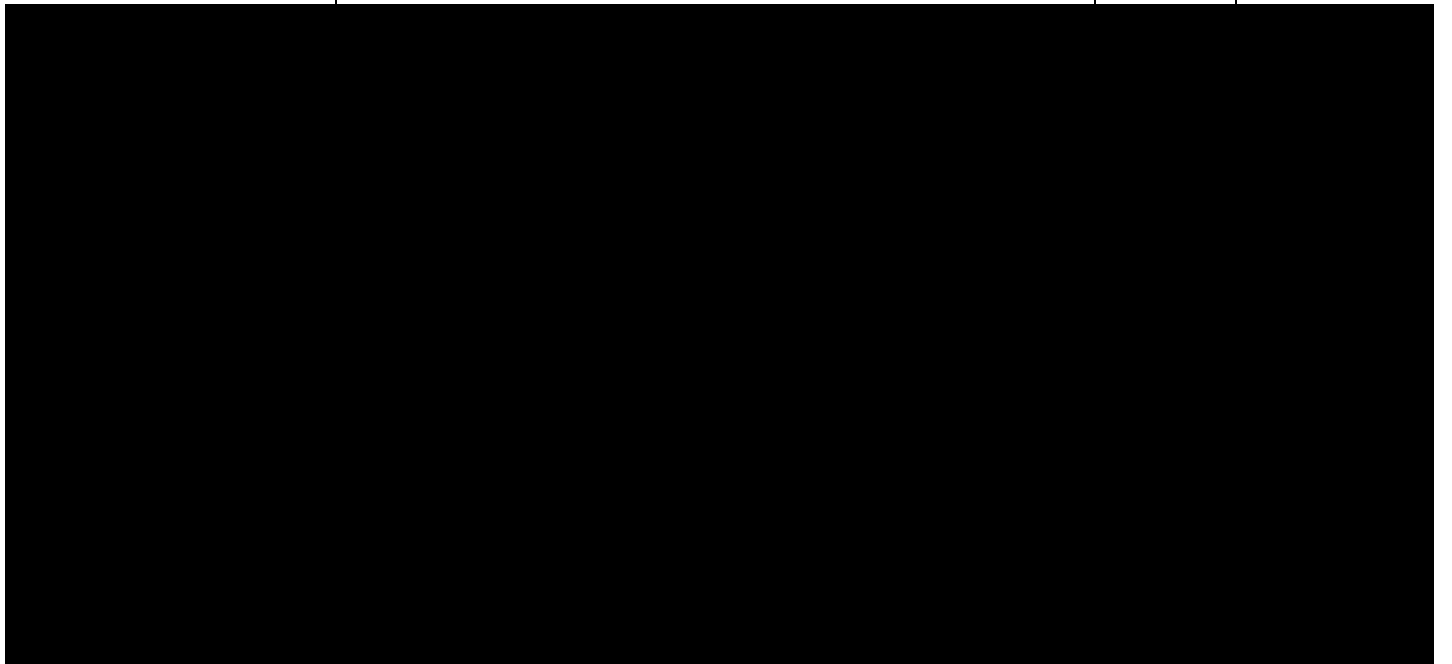


54. Table 12 and Table 13 summarize the transactions flagged based on the Trailing Six-Month Maximum Threshold Approach in Cuyahoga and Summit Counties.

Table 12 Trailing Six-Month Maximum Threshold Flagged Transactions Attributed to  
Manufacturer Defendants, Cuyahoga County, 2006-2014

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Table 13 Trailing Six-Month Maximum Threshold Flagged Transactions Attributed to  
Manufacturer Defendants, Summit County, 2006-2014

A large black rectangular redaction box covering the entire content of Table 13.

**B. Twice Trailing Twelve-Month Average Pharmacy Dosage Units**

55. Figure 4 illustrates total opioid transactions to retail and chain pharmacies in Cuyahoga County from 2006 to 2014 attributable to Manufacturer Defendants. The Twice Trailing Twelve-Month Average Pharmacy Threshold methodology flags [REDACTED] [REDACTED] of drug weight shipped into Cuyahoga County.

56. Figure 5 illustrates total opioid transactions to retail and chain pharmacies in Summit County from 2006 to 2014 attributable to Manufacturer Defendants. The Twice Trailing Twelve-Month Average Pharmacy Threshold methodology flags [REDACTED] [REDACTED] of drug weight shipped into Summit County.

Figure 4 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014

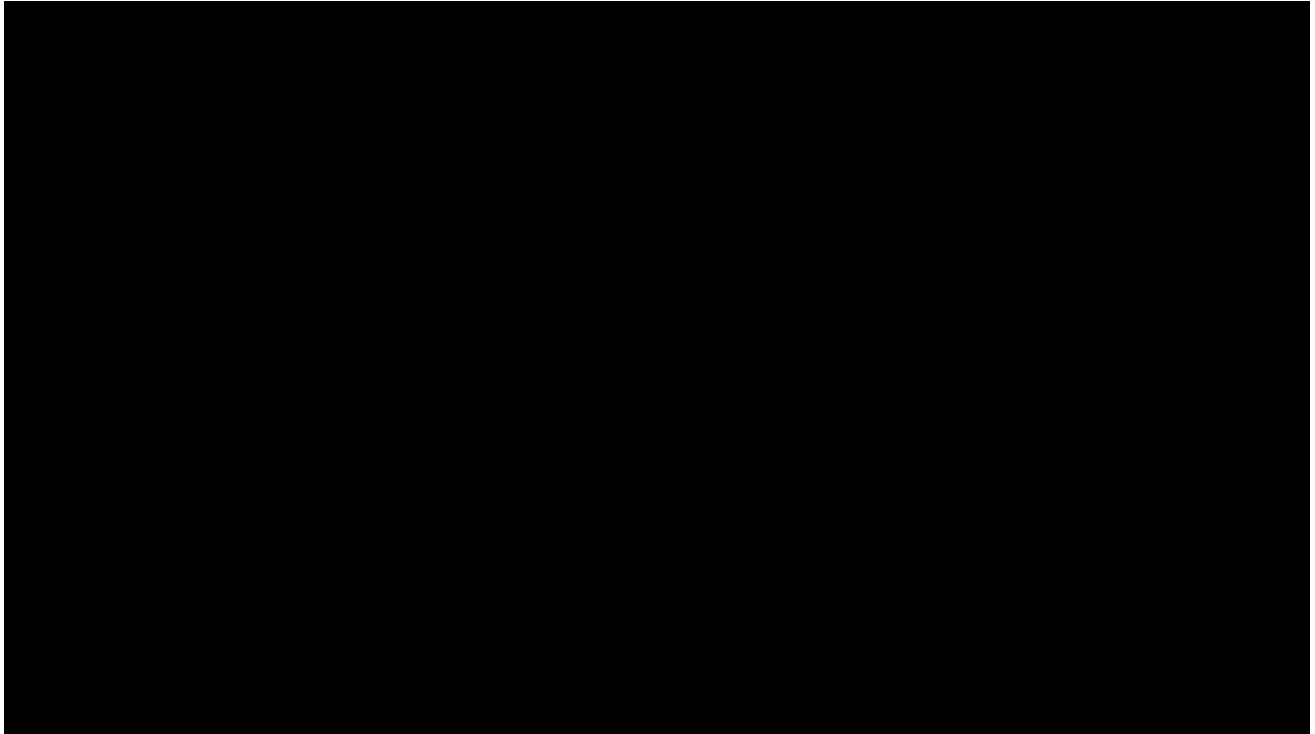
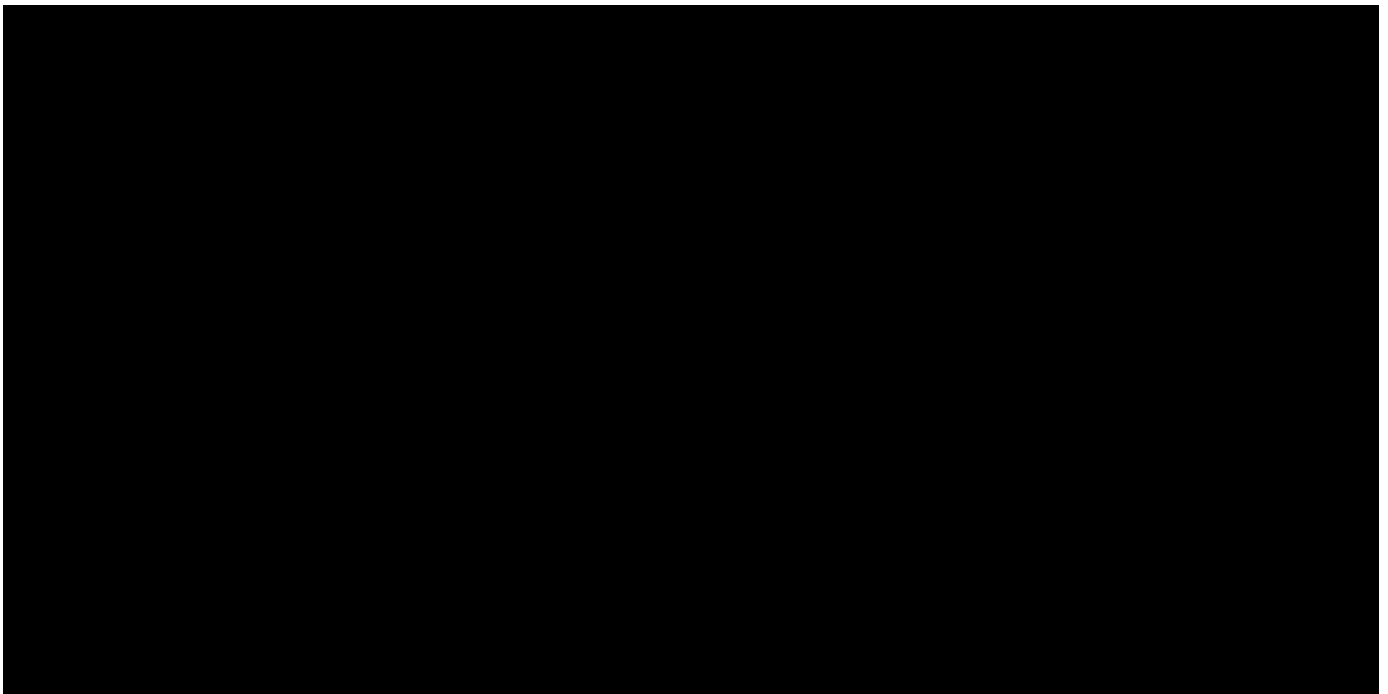


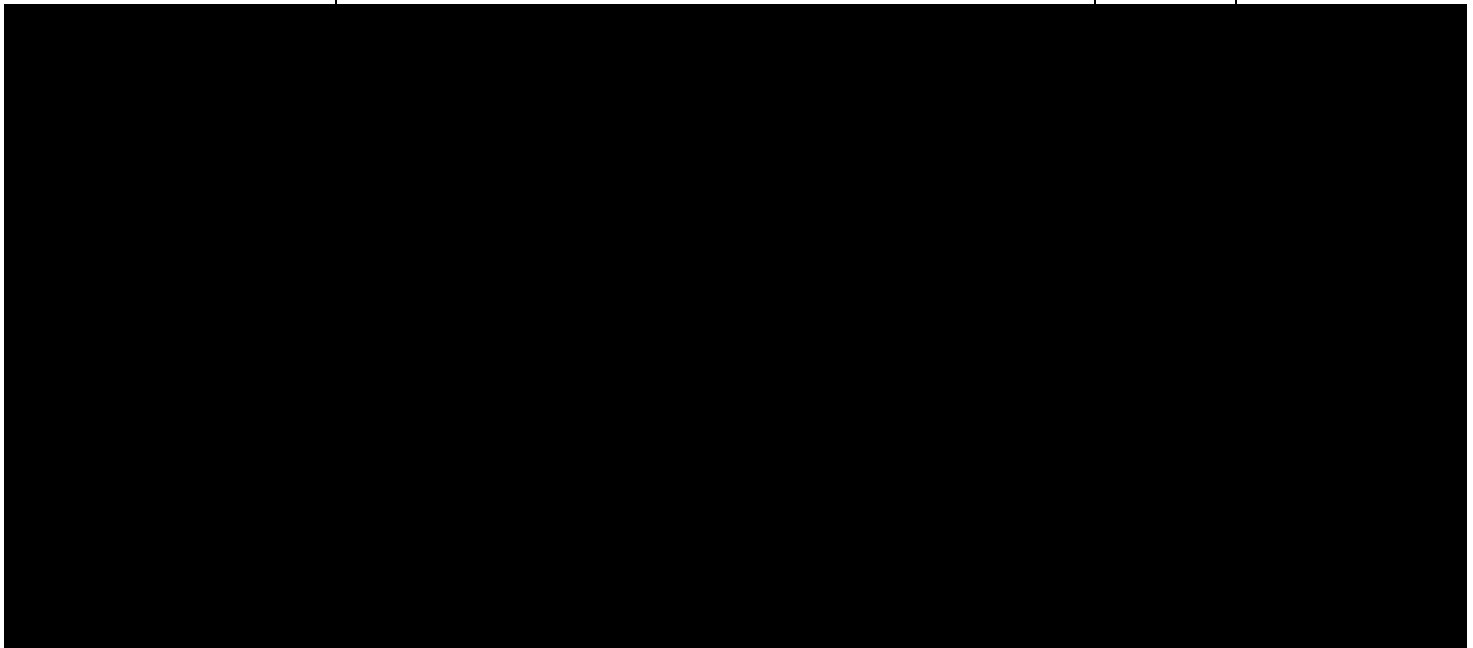
Figure 5 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



57. Table 14 and Table 15 summarize the transactions flagged based on the Twice Trailing Twelve-Month Average Pharmacy Threshold methodology in Cuyahoga and Summit Counties.

Table 14 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-

Table 15 Twice Trailing Twelve-Month Average Pharmacy Dosage Units Threshold  
Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



**C. Three Times Trailing Twelve-Month Average Pharmacy Dosage Units**

58. Figure 6 illustrates total opioid transactions to retail and chain pharmacies in Cuyahoga County from 2006 to 2014 attributable to Manufacturer Defendants. The Three Times Trailing Twelve-Month Average Pharmacy Threshold methodology flags [REDACTED] [REDACTED] of drug weight shipped into Cuyahoga County.

59. Figure 7 illustrates total opioid transactions to retail and chain pharmacies in Summit County from 2006 to 2014 attributable to Manufacturer Defendants. The Three Times Trailing Twelve-Month Average Pharmacy Threshold methodology flags [REDACTED] [REDACTED] of drug weight shipped into Summit County.



Figure 6 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold  
Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-  
2014

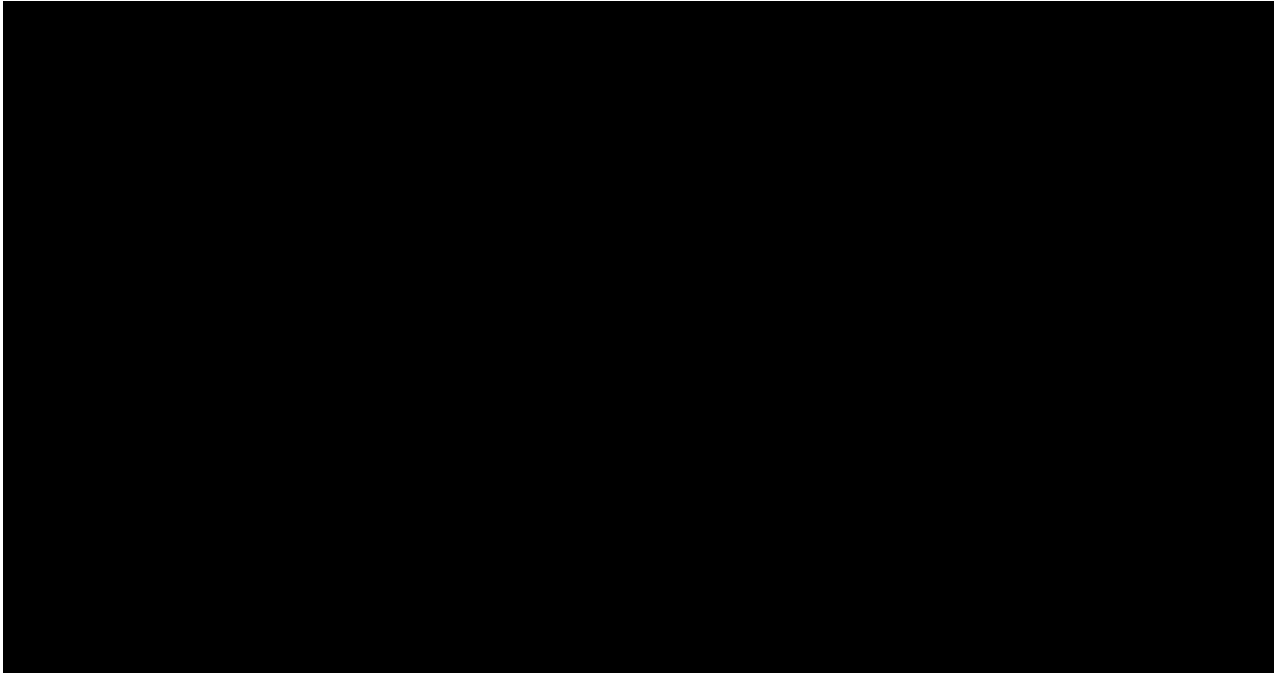
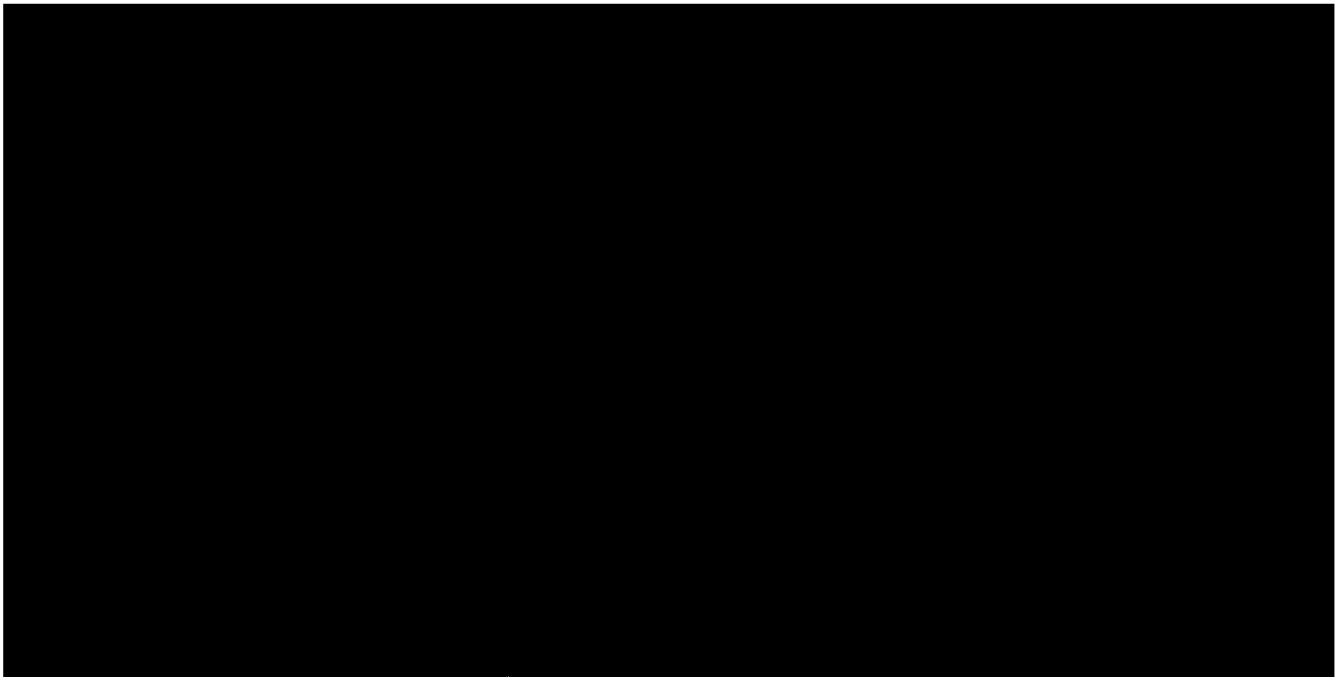


Figure 7 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold  
Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



60. Table 16 and Table 17 summarize the transactions flagged based on the Three Times Trailing Twelve-Month Average Pharmacy Threshold methodology in Cuyahoga and Summit Counties.

Table 16 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-

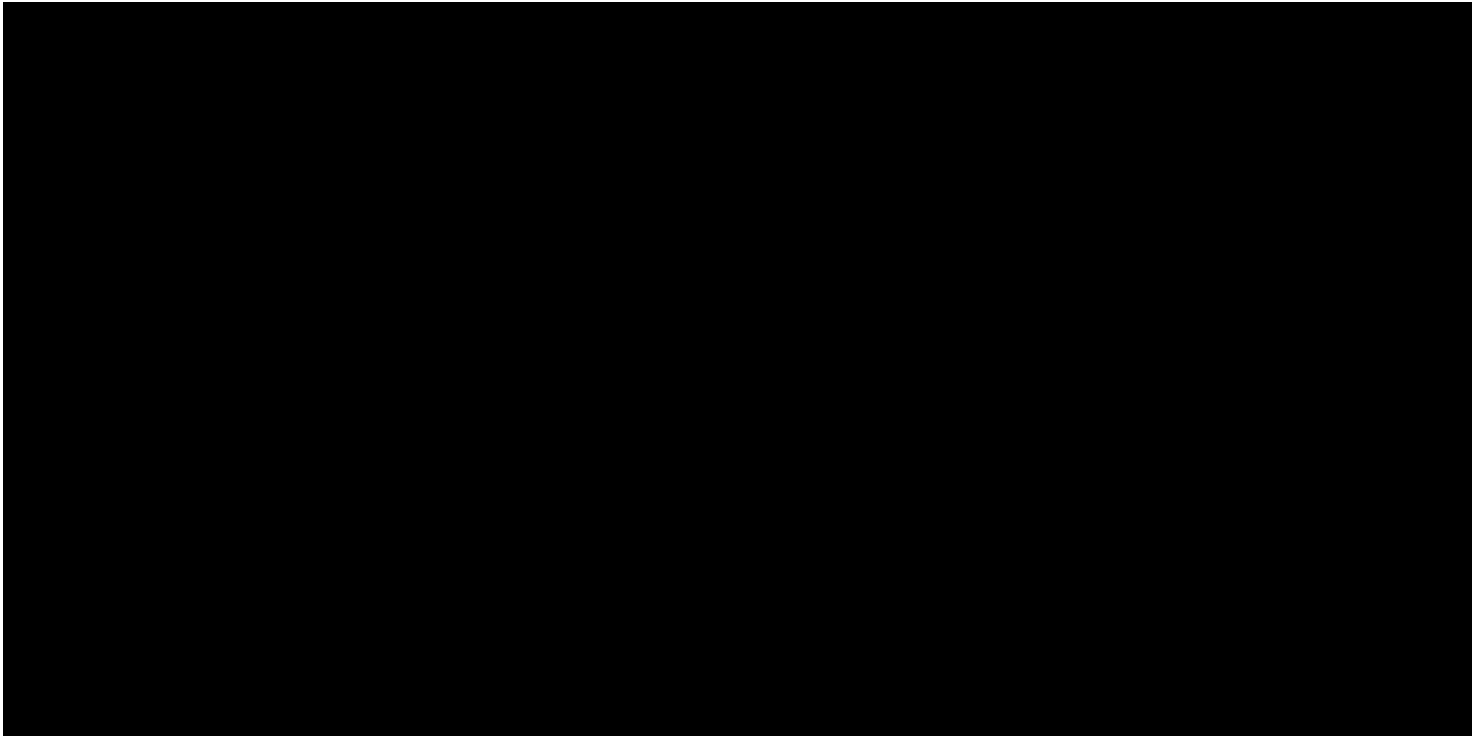


Table 17 Three Times Trailing Twelve-Month Average Pharmacy Dosage Units Threshold  
Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



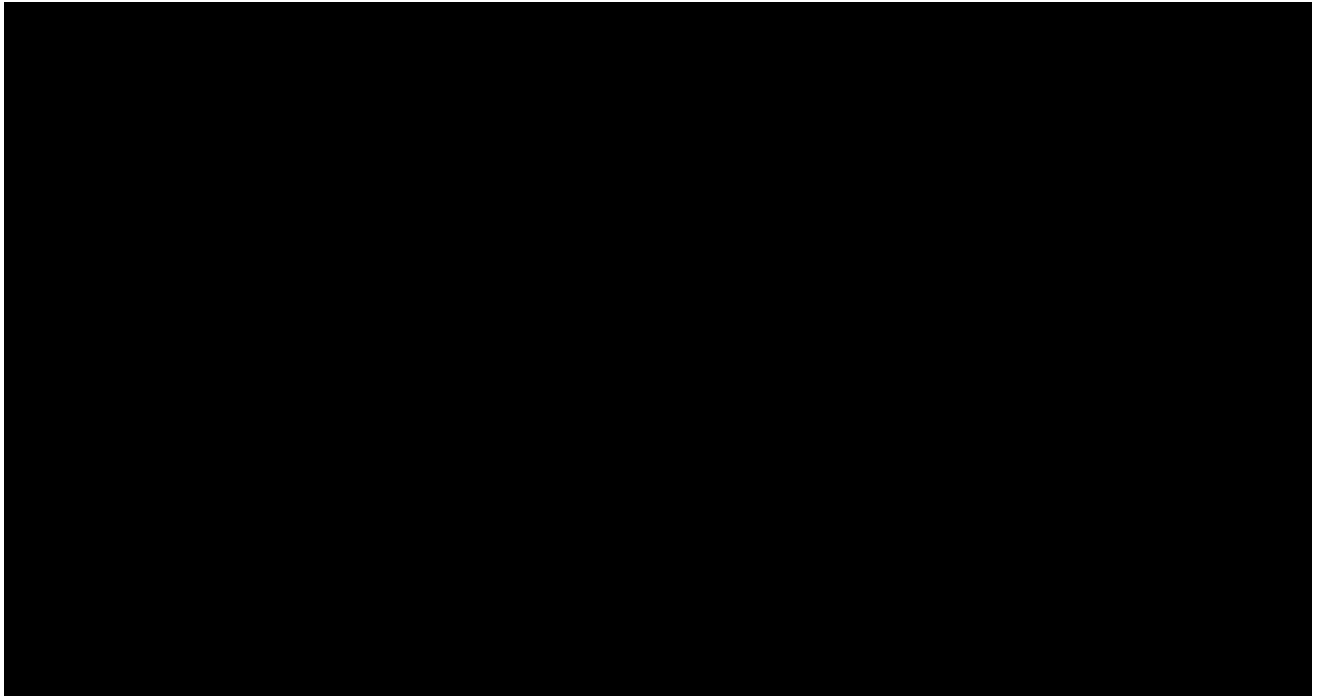
**D. Maximum [REDACTED] Dosage Units Monthly**

61. I identify transactions that cause the number of dosage units to a Pharmacy in a calendar month attributable to Manufacturer Defendant to exceed [REDACTED] dosage units. As stated above, I have been asked by Counsel to assume that the Manufacturer did not effectively investigate the flagged transactions and so every subsequent transaction of that drug code is also flagged because the Manufacturer had an unfulfilled obligation to detect and investigate the first flagged transaction.

62. Figure 8 illustrates total opioid transactions into Cuyahoga County from ARCOS Data for 2006 to 2014 I attribute to a Manufacturer Defendant and the transactions flagged under the Maximum [REDACTED] Dosage Units Monthly Threshold methodology. This methodology flags [REDACTED]

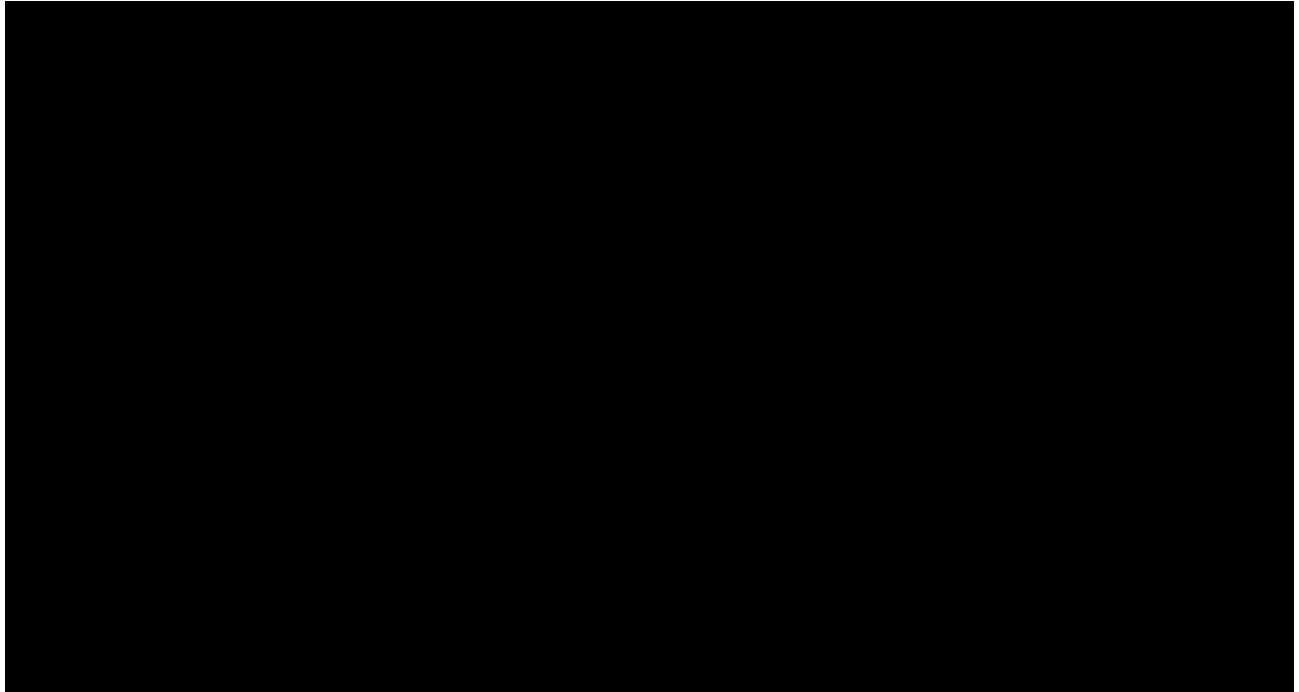
[REDACTED]  
of drug weight shipped into Cuyahoga County.

Figure 8 Maximum [REDACTED] Dosage Units Monthly Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014



63. Figure 9 illustrates total opioid transactions into Summit County from ARCOS Data for 2006 to 2014 I attribute to a Manufacturer Defendant and the transactions flagged by the Maximum [REDACTED] Dosage Units Monthly Threshold methodology. This methodology flags [REDACTED] [REDACTED] of drug weight shipped into Summit County.

Figure 9 Maximum [REDACTED] Dosage Units Monthly Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



64. Table 18 and Table 19 summarize the transactions flagged based on the Maximum [REDACTED] Dosage Units Monthly Threshold Approach in Cuyahoga and Summit Counties.

Table 18 Maximum [REDACTED] Dosage Units Monthly Threshold Flagged Transactions  
Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014

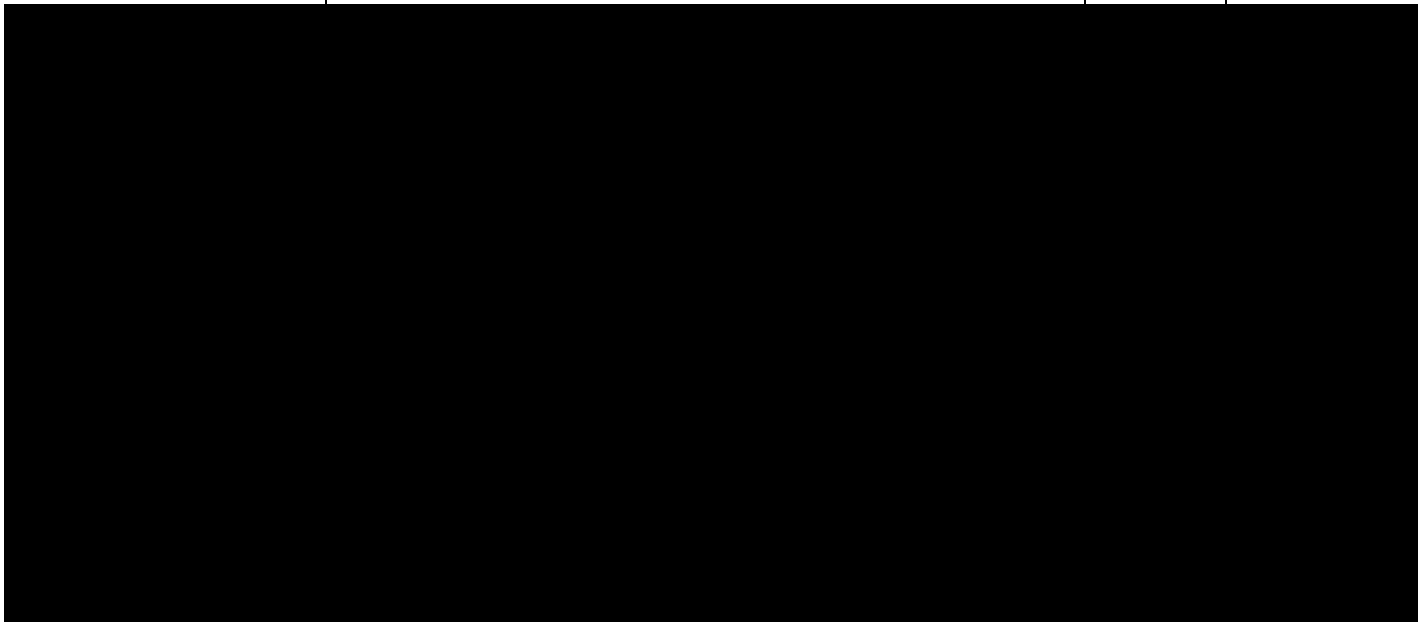
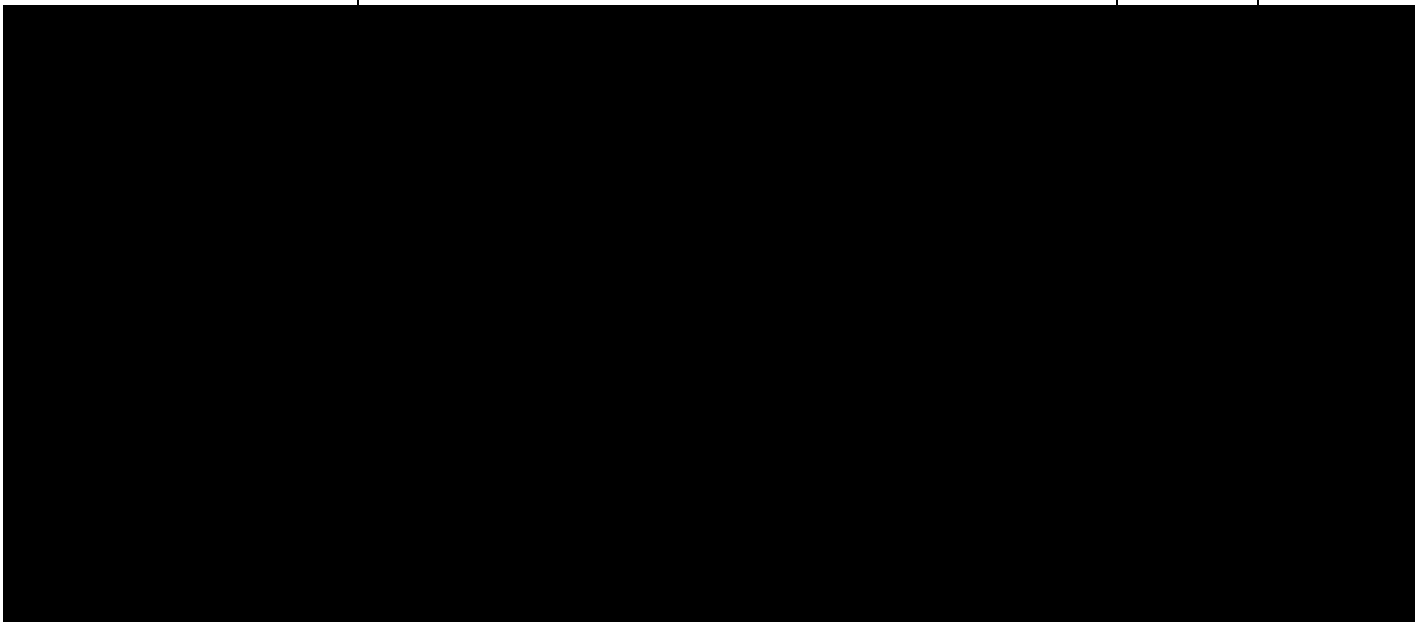


Table 19 Maximum [REDACTED] Dosage Units Monthly Threshold Flagged Transactions  
Attributed to Manufacturer Defendants, Summit County, 2006-2014



**E. Maximum Daily Dosage Units**

65. I identify transactions that cause the number of dosage units to a Pharmacy in a day attributable to a Manufacturer Defendant to exceed a

number of dosage units that varies by drug type and within some drug types by formulation.<sup>14</sup> I have been asked by Counsel to assume that the Manufacturer did not effectively investigate the flagged transactions and so every subsequent transaction of that drug code is also flagged because the Distributor had an unfulfilled obligation to detect and investigate the first flagged transaction.

66. Figure 10 illustrates total opioid transactions into Cuyahoga County from ARCOS Data for 2006 to 2014 I attribute to a Manufacturer Defendant and the transactions flagged by the Maximum Daily Dosage Units Threshold methodology. This methodology flags [REDACTED] of drug weight shipped into Cuyahoga County.

Figure 10 Maximum Daily Dosage Units Flagged Transactions Attributed to Manufacturer Defendants, Cuyahoga County, 2006-2014

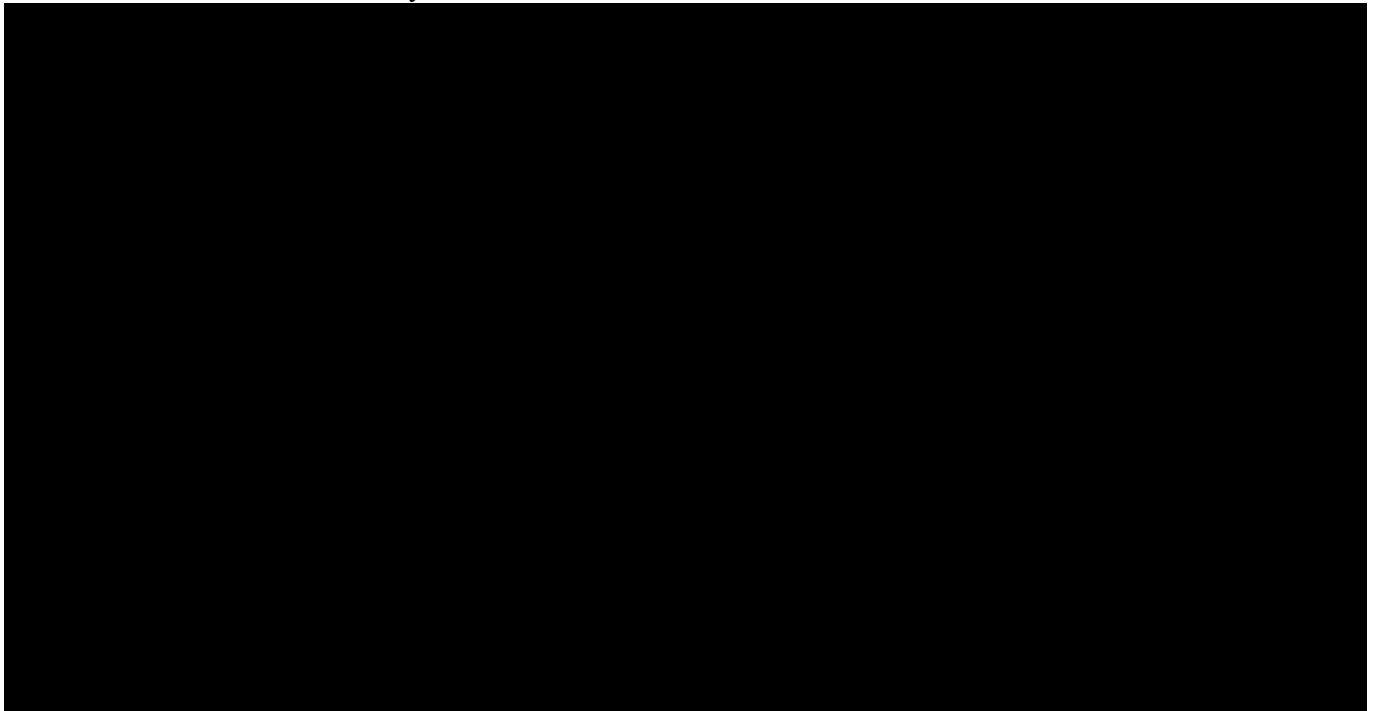


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<sup>14</sup> Maximum Daily Dosage Units used as specified in CAH\_MDLPRIORPRO\_DEA07\_01384160

67. Figure 11 illustrates total opioid transactions into Summit County from ARCOS Data for 2006 to 2014 I attribute to a Manufacturer Defendant and the transactions flagged by the Maximum Daily Dosage Units Threshold methodology. This methodology flags [REDACTED] of drug weight shipped into Summit County.

Figure 11 Maximum Daily Dosage Units Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014



68. Table 20 and Table 21 summarize the transactions flagged based on the Maximum Daily Dosage Units Threshold Approach in Cuyahoga and Summit Counties.



Table 20 Maximum Daily Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants in Cuyahoga County, 2006-2014

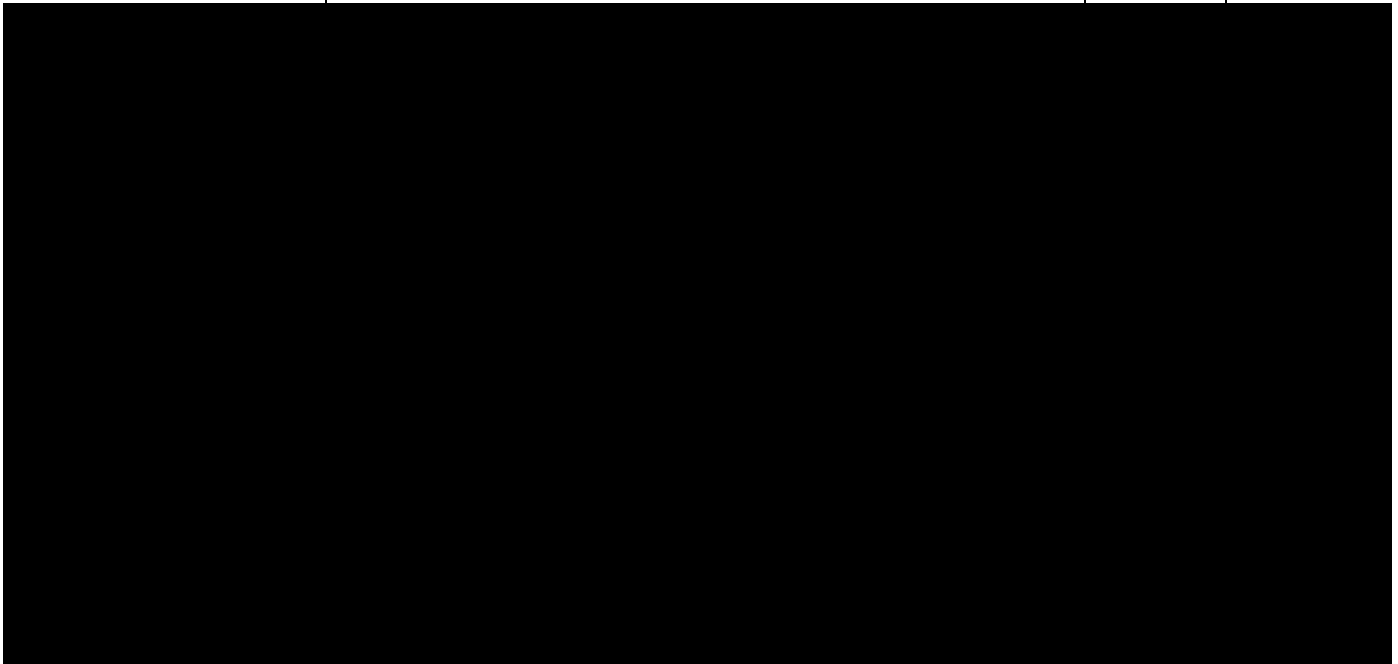
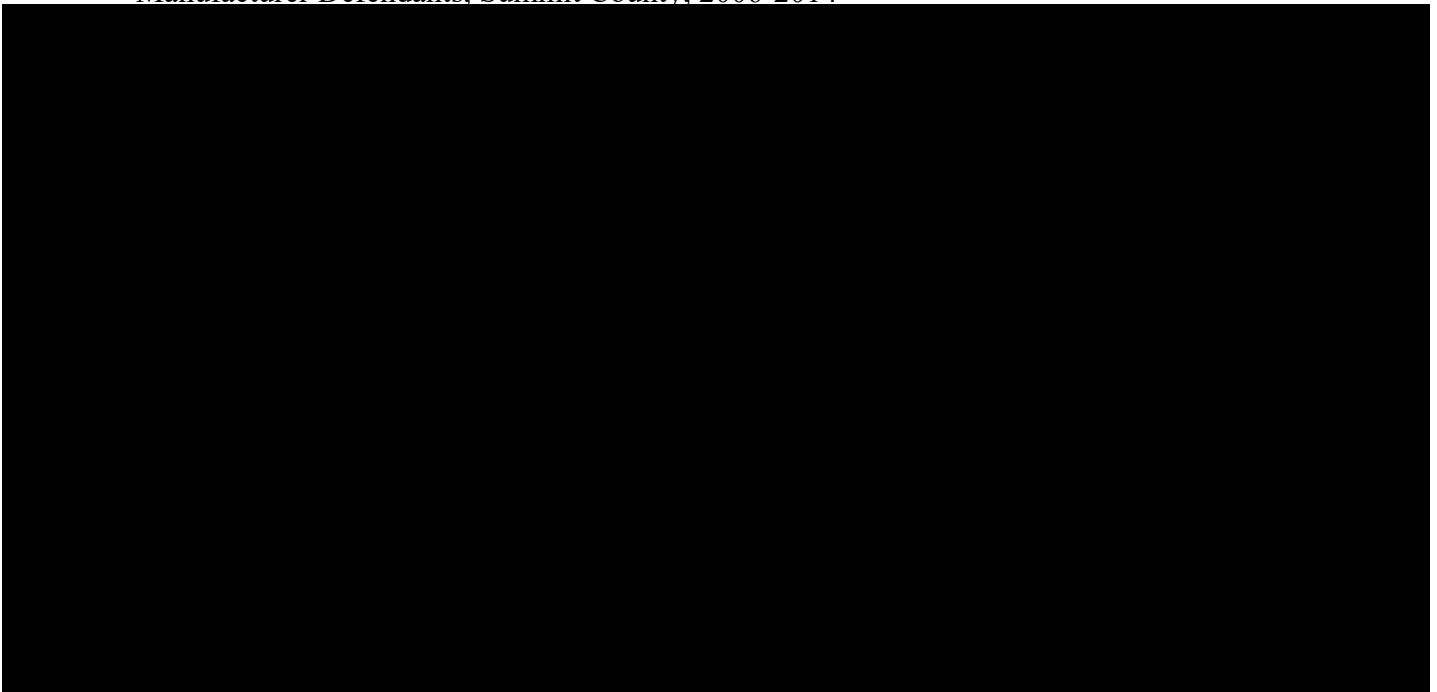
A large black rectangular redaction box covering the entire content of Table 20.

Table 21 Maximum Daily Dosage Units Threshold Flagged Transactions Attributed to Manufacturer Defendants, Summit County, 2006-2014

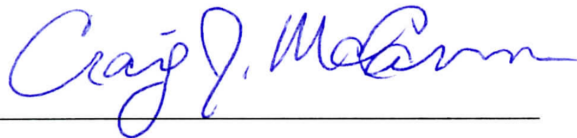
A large black rectangular redaction box covering the entire content of Table 21.

## **VI. Conclusion**

69. In this supplement to McCann Report, I explained how the ARCOS data, NDC numbers and chargeback data can be used to attribute a transaction with a Dispenser in Cuyahoga County and Summit County to a Manufacturer Defendant.

70. I reported the results of applying the non-exhaustive set of algorithms in the McCann Report for flagging transactions to the transactions attributable to Manufacturer Defendants.

71. I continue to review documents and gather information and reserve the right to update my analysis and opinions based upon that further review of documents and based on any new information - including possibly reports of other experts - I may receive.



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Craig J. McCann, Ph.D., CFA

## Appendix 1 Labelers, Cuyahoga County and Summit County, ARCOS Data, 2006-2014

Rank	Labeler Name	MME	Perecent	Cumulative
1				

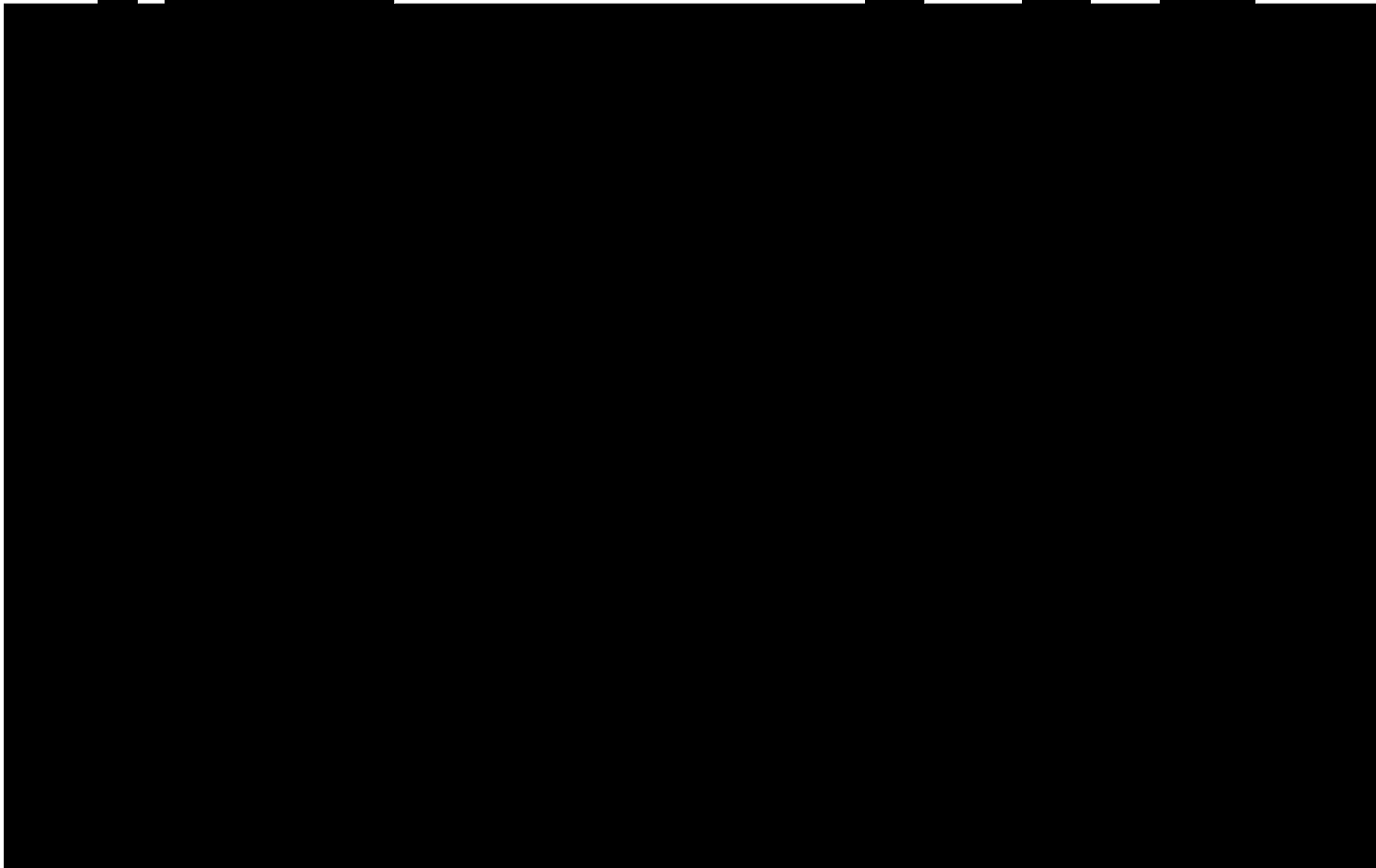
Rank	Labeler Name	MME	Perecent	Cumulative
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[REDACTED]				
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Rank	Labeler Name	MME	Perecent	Cumulative
█	█	█	█	█

[REDACTED]				
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Rank	Labeler Name	MME	Perecent	Cumulative
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## **Appendix 2 Chargeback Data**

1. InSys Therapeutics
  - a. INSYS-MDL-015002410
2. Janssen
  - a. JAN-MS-02963355
  - b. JAN-MS-02963411
  - c. JAN-MS\_03108830
  - d. JAN-MS\_05433886
  - e. JAN-MS\_05433889
3. Mallinckrodt
  - a. MNK-T1\_0007965587
  - b. MNK-T1\_0007965588
4. Endo Pharmaceuticals
  - a. ENDO\_DATA-OPIOID\_MDL-00000044 through  
ENDO\_DATA-OPIOID\_MDL-00000084
5. Par Pharmaceuticals
  - a. PAR\_OPIOID\_MDL\_0001596821 through  
PAR\_OPIOID\_MDL\_0001596826
6. Qualitest
  - a. PAR\_OPIOID\_MDL\_0002016639 through  
PAR\_OPIOID\_MDL\_0002016786

7. Purdue
  - a. PPLP004418578 through PPLP004422150
8. Actavis
  - a. Acquired\_Actavis\_01996162 through  
Acquired\_Actavis\_01996173
  - b. Acquired\_Actavis\_02001331
  - c. Acquired\_Actavis\_02001522
9. Allergan
  - a. ALLERGAN\_MDL\_03255576\_0001 through  
ALLERGAN\_MDL\_03255576\_0010
  - b. ALLERGAN\_MDL\_03303052\_001 through  
ALLERGAN\_MDL\_03303052\_003
  - c. ALLERGAN\_MDL\_03303053\_001 through  
ALLERGAN\_MDL\_03303053\_050
  - d. ALLERGAN\_MDL\_03729472
  - e. ALLERGAN\_MDL\_03729468
  - f. ALLERGAN\_MDL\_03729469
  - g. ALLERGAN\_MDL\_03732865
10. Teva
  - a. TEVA\_MDL\_A\_02401118
  - b. TEVA\_MDL\_A\_02416193
  - c. TEVA\_MDL\_A\_02419960



- d. TEVA\_MDL\_A\_02419963
- e. TEVA\_MDL\_A\_02416194 through  
TEVA\_MDL\_A\_02416204
- f. TEVA\_MDL\_A\_02419961
- g. TEVA\_MDL\_A\_02419964 through  
TEVA\_MDL\_A\_02419969
- h. TEVA\_MDL\_A\_07869902
- i. TEVA\_MDL\_A\_07876854
- j. TEVA\_MDL\_A\_07880643
- k. TEVA\_MDL\_A\_07885150
- l. TEVA\_MDL\_A\_07889185
- m. TEVA\_MDL\_A\_07889289
- n. TEVA\_MDL\_A\_07901020
- o. TEVA\_MDL\_A\_07907289
- p. TEVA\_MDL\_A\_07914958
- q. TEVA\_MDL\_A\_07921677
- r. TEVA\_MDL\_A\_07921926 through  
TEVA\_MDL\_A\_07921928
- s. TEVA\_MDL\_A\_07928169
- t. TEVA\_MDL\_A\_08637273 through  
TEVA\_MDL\_A\_08637277